Procedure Oriented Programming (POP):

The programming language is said to be POP which focuses on procedure or function rather than data. In this programming language when a program is larger, it is then broken into smaller units called procedure or functions. High level programming languages like C, FORTAN, Pascal, etc are common procedure oriented programming languages.

Characteristics of POP:

1. A large program is broken into small manageable procedures or functions.
2. POP follows Top Down approach.
3. POP does not have any access specifier.
4. In POP, overloading is not possible.
5. To add new data and functions in POP is not so easy.
6. POP does not have any proper way for data hiding so it is less secure.
7. Code reusability is still difficult.

Object Oriented Programming (OOP):

The programming language in which both objects and classes are used called OOP. This programming language focuses on data rather than procedures.OOP is a programming methodology that associates data structures with a set of operators which act upon it. Some common examples of OOP are C++, JAVA, VB.NET, C#.NET, etc.

Characteristics of OOP:

1. OOP follows Bottom Up approach.
2. Programs are divided into objects.
3. OOP has access specifiers named public, private, protected, etc.
4. In OOP, overloading is possible in the form of function overloading and Operator Overloading.
5. OOP provides data hiding so it is more secure.
6. OOP provides an easy way to add new data and function.
7. Data structures are modeled as objects.
8. Code reusability is easy in compare to POP.

Application Fields of OOP:

1. Real time systems.
2. Simulation and modeling.
3. Object oriented databases.
4. Neural network and parallel programming.
5. Decision support and office automation systems.

Advantages of OOP:

1. Through data hiding, security of information increases.
2. Through abstraction, simplicity of system increases.
3. Through encapsulation, customizing is easy.
4. Through inheritance using code reuse, time complexity decreases.
5. Through polymorphism, flexibility of program increases.
6. Global data problem is reduced using class and object concept.

Disadvantages of OOP:

1. Larger programming size.
2. Slower programs.
3. Steep learning curve.